

IN THE CLAIMS:

This Listing of Claims will replace all prior versions, and listings, of claims in the subject Patent Application:

Listing of Claims:

1. (Currently amended) A speech synthesizer comprising:
 - a signal transform unit for receiving and transforming a series of digital speech codes defining a waveform having positive and negative half cycles to be an analog speech signal with its negative half cycles inverted to positive polarity; and
 - a current output unit connected to said signal transform unit and including a first and second signal output terminals, for receiving said analog speech signal and outputting its positive and negative cycles currents respectively from said first and second output terminals.
2. (Original) A speech synthesizer according to claim 1 further comprising a volume control unit for receiving a control signal and generating a control bias.
3. (Original) A speech synthesizer according to claim 1 wherein said signal transform unit controls transformation of said digital speech codes with a most significant bit of each said digital speech code.

4. (Currently amended) A speech synthesizer ~~according to claim 1~~
comprising:

a signal transform unit for receiving and transforming a series of
digital speech codes to be an analog speech signal with its negative half cycles
inverted; and

a current output unit connected to said signal transform unit and
including first and second signal output terminals, for receiving said analog speech
signal and outputting its positive and negative cycles currents respectively from
said first and second output terminals;

~~wherein~~ said signal transform unit comprising:

a switched buffer controlled by said most significant bit of
said digital speech codes for receiving and outputting other bits of said digital
speech codes;

a switched inverter buffer controlled by an inverse of said
most significant bit of said digital speech codes for receiving and outputting other
bits of said digital speech codes; and

a digital-to-analog converter connected to said switched
buffer and inverter buffer for transforming into said analog speech signal.

5. (Currently amended) A speech synthesizer ~~according to claim 1~~
comprising:

a signal transform unit for receiving and transforming a series of digital speech codes to be an analog speech signal with its negative half cycles inverted; and

a current output unit connected to said signal transform unit and including first and second signal output terminals, for receiving said analog speech signal and outputting its positive and negative cycles currents respectively from said first and second output terminals;

~~wherein~~ said current output unit comprising:

a first switch controlled by said most significant bit of said digital speech codes, with a first terminal connected to said first signal output and a second terminal connected to a high voltage;

a second switch controlled by an inverse of said most significant bit of said digital speech codes, with a first terminal connected to said second signal output and a second terminal connected to said high voltage;

a first switched current source controlled by said most significant bit of said digital speech codes, for outputting said analog speech signal and with a first terminal connected to said second signal output and a second terminal connected to a low voltage; and

a second switched current source controlled by said most significant bit of said digital speech codes, for outputting said analog speech signal

and with a first terminal connected to said first signal output and a second terminal connected to said low voltage.

6. (Original) A speech synthesizer according to claim 1 wherein said current output unit comprising:

- a first switched current source controlled by said most significant bit of said digital speech codes, with a first terminal connected to said first signal output and a second terminal connected to a high voltage;

- a first switch controlled by said most significant bit of said digital speech codes, for outputting said analog speech signal and with a first terminal connected to said second signal output and a second terminal connected to a low voltage;

- a second switch controlled by an inverse of said most significant bit of said digital speech codes, with a first terminal connected to said second signal output and a second terminal connected to said high voltage; and

- a second switched current source controlled by said most significant bit of said digital speech codes, for outputting said analog speech signal and with a first terminal connected to said first signal output and a second terminal connected to said low voltage.

7. (Original) A speech synthesizer according to claim 1 wherein said current output unit comprising:

a first switched current source controlled by said most significant bit of said digital speech codes, with a first terminal connected to said first signal output and a second terminal connected to a high voltage;

a second switched current source controlled by said most significant bit of said digital speech codes, with a first terminal connected to said second signal output and a second terminal connected to said high voltage;

a first switch controlled by said most significant bit of said digital speech codes, for outputting said analog speech signal and with a first terminal connected to said second signal output and a second terminal connected to a low voltage; and

a second switch controlled by said most significant bit of said digital speech codes, for outputting said analog speech signal and with a first terminal connected to said first signal output and a second terminal connected to said low voltage.

8. (Original) A speech synthesizer according to claim 5 wherein said first and second switches are transistors.

9. (Original) A speech synthesizer according to claim 6 wherein said first and second switches are transistors.

10. (Original) A speech synthesizer according to claim 7 wherein said first and second switches are transistors.

11. (Original) A speech synthesizer according to claim 5 wherein said first switched current source comprising:

a first transistor with a drain connected to an output of said signal transform unit, a source connected with said low voltage, and a gate connected to its drain;

a second transistor with a gate, a drain connected to said first signal output terminal and a source connected to said low voltage; and

a first variable current controlled switch controlled by said most significant bit of said digital speech codes, with a first terminal connected to said gate of said first transistor and a second terminal connected to said gate of said second transistor for forming a current mirror composed of said first and second transistors when said first variable current controlled switch is enabled.

12. (Original) A speech synthesizer according to claim 11 said second switched current source comprising:

a third transistor with a gate, a drain connected to said first signal output terminal and a source connected to said low voltage; and

a second variable current controlled switch controlled by said most significant bit of said digital speech codes, with a first terminal connected to said gate of said first transistor and a second terminal connected to said gate of said third transistor for forming an another current mirror composed of said first and third transistors when said second variable current controlled switch is enabled.